

HIGH CITRATE DIALYSATE AND USES THEREOF

ABSTRACT OF THE DISCLOSURE

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The dose of dialysis in terms of urea clearance is marginal in many hemodialysis patients, and metabolic acidosis as determined by the pre-dialysis serum HCO_3 level is common. A dialysate that included citric acid rather than acetic acid as acidifying agent provides superior performance properties. Citrate-containing dialysate was used exclusively in 22 hemodialysis patients. Initially, only 8 of the 22 patients had a pre-dialysis serum $\text{HCO}_3 > 23 \text{ mEq/L}$ (lower limit of normal), however, after 12 weeks of dialysis using the citrate-containing dialysate, the serum HCO_3 normalized in 15 patients ($p=0.0001$, Chi-square). Dialysis variables were kept constant in 19 of the patients, who also used and reused the same dialyzer model throughout. In these patients, the initial average urea reduction ratio (URR) was $68.5 \pm 5.9\%$, and after treatment with the citrate dialysate disclosed herein, this ratio had increased to $73 \pm 5.3\%$ ($p < 0.03$). SpKt/V , calculated using the Daugirdas II formula, also increased from 1.23 ± 0.19 to 1.34 ± 0.2 ($p=0.01$). This increased urea clearance may be the result of the anticoagulant property of citrate maintaining patency of the dialyzer membrane. The increase in pre-dialysis serum HCO_3 may represent increased delivery from the dialysate and production from citric acid.